Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A method for performing motion estimation comprising:

receiving a stream of data comprising at least a predicted frame and a temporally closest anchor frame; [[and]]

<u>if the temporally closest anchor frame is previous to the predicted frame,</u> utilizing even-parity field prediction to <u>only</u> unidirectionally <u>forward</u> predict content of each of a plurality of fields of the unidirectionally <u>forward</u> predicted frame from corresponding fields of only the temporally closest anchor frame[[,]]<u>; and</u>

<u>if the temporally closest anchor frame is subsequent to the predicted frame, utilizing even-parity field prediction to only unidirectionally backward predict content of each of a plurality of fields of the unidirectionally backward predicted frame from corresponding fields of only the temporally closest anchor frame;</u>

wherein the unidirectionally predicted frame <u>that is predicted only from the temporally closest anchor frame</u> comprises a frame that is defined as a bi-directionally predicted frame according to an encoding protocol for the stream of data.

2. (Original) The method of claim 1, wherein the content of each of the plurality of fields of the predicted frame are predicted merely from a corresponding field of the plurality of fields comprising the anchor frame, scaled by a dynamically determined motion vector.

3. (Original) The method of claim 2, wherein the motion vector is dynamically determined by measuring activity within each of the plurality of fields of the anchor frame.

4. (Original) The method of claim 1, wherein the predicted frame either precedes or supersedes the anchor frame based, at least in part, on the predicted frame type.

5. (Original) The method of claim 1, wherein each of the predicted and anchor frames contain interlaced video content or progressive video content.

6. (Original) The method of claim 5, wherein a first field of the predicted frame and the anchor frame comprises even-field content of the interlaced video content, and a second field of the predicted frame and the anchor frame comprises odd-field content of the interlaced video content

7. (Original) The method of claim 5, wherein a first field of the predicted frame comprises even-field content of the interlaced video content and a first field of the anchor frame comprises odd-field content of the interlaced video content.

8. (Original) The method of claim 5, wherein a first field of the predicted frame comprises odd-field content of the interlaced video content and a first field of the anchor frame comprises even-field content of the interlaced video content.

9. (Original) The method of claim 1, wherein one or more motion estimation vectors are generated for each of the plurality of fields of the anchor frame by measuring a sum of absolute differences.

10. (Original) The method of claim 1, wherein even-field interlaced video content of the predicted frame is predicted from even-field interlaced video content of the anchor frame, and odd-field interlaced video content of the predicted frame is predicted from odd-field interlaced video content of the anchor frame.

11. (Original) The method of claim 10, wherein the even-field interlaced video content of the predicted frame is predicted from the even-field interlaced video content of the anchor frame and a motion vector, wherein the motion vector is determined by measuring a sum of absolute differences within the even-field interlaced video content of the anchor frame.

12. (Currently Amended) An apparatus comprising:

a motion estimation circuit to receive a stream of data comprising at least [[an]] a temporally closest anchor frame and a predicted frame[[, and]];

if the temporally closest anchor frame is previous to the predicted frame, to utilize even-parity field prediction to only unidirectionally forward predict content of each of a plurality of fields of the unidirectionally forward predicted frame from corresponding fields of only [[a]]the temporally closest anchor frame in the stream of data[[,]]; and

if the temporally closest anchor frame is subsequent to the predicted frame, to utilize even-parity field prediction to only unidirectionally backward predict content of each of a plurality of fields of the unidirectionally backward predicted frame from corresponding fields of only the temporally closest anchor frame in the stream of data;

wherein the unidirectionally predicted frame that is predicted only from the temporally closest anchor frame comprises a frame that is defined as a bi-directionally predicted frame according to an encoding protocol for the stream of data.

13. (Original) The apparatus of claim 12, wherein the anchor frame used either precede or supersede the predicted frame depending on predicted frame type.

14. (Original) The apparatus of claim 12, wherein the motion estimation circuit measures activity content within each of the plurality of fields of the anchor frame to generate a corresponding plurality of motion vectors.

15. (Original) The apparatus of claim 14, wherein the motion estimation circuit predicts content of a first in the predicted frame from content of a corresponding first field in the anchor frame and a first field motion vector, and predicts content of a second field in the predicted frame from a corresponding second field and a second field motion vector.

16. (Original) The apparatus of claim 12, wherein the predicted frame and anchor frame are comprised of interlaced video content, wherein a first field of each of the predicted frame and the anchor frame contain even-field interlaced video content, while a second field of each of the predicted frame and the anchor frame contain odd-field interlaced video content.

17. (Original) The apparatus of claim 12, wherein motion estimation circuit generates a motion vector for each of a first and second field of the predicted frame by measuring a sum of absolute activity differences in a corresponding first and second field of the anchor frame.

18. (Currently Amended) A storage medium comprising a plurality of executable instructions which, when executed, causes an executing processor to implement a motion estimation function to receive a stream of data comprising at least a predicted frame and a temporally closest anchor frame;

if the temporally closest anchor frame is previous to the predicted frame, to utilize even-parity field prediction to only unidirectionally forward predict content of each of a

plurality of fields of [[a]]the unidirectionally forward predicted frame from corresponding fields of only [[a]]the temporally closest anchor frame[[,]]; and

if the temporally closest anchor frame is subsequent to the predicted frame, to utilize even-parity field prediction to only unidirectionally backward predict content of each of a plurality of fields of the unidirectionally backward predicted frame from corresponding fields of only the temporally closest anchor frame;

wherein the unidirectionally predicted frame that is predicted only from the temporally closest anchor frame comprises a frame that is defined as a bi-directionally predicted frame according to an encoding protocol for the stream of data.

19. (Original) The storage medium of claim 18, wherein the motion estimation function generates a motion vector associated with each of the plurality of fields of the predicted frame based, at least in part, on a sum of absolute activity differences within each of the plurality of fields of the anchor frame.

20. (Currently Amended) A method for performing motion estimation comprising:

receiving a stream of data comprising reference frames and non-reference frames; and

only forward predicting, only unidirectionally, content of each of a plurality of fields in non-reference frames and select reference frames using information contained in merely corresponding fields of a single past~~ or subsequent~~, temporally closest, reference frame[[,]]; and

<u>only backward predicting, only unidirectionally, content of each of a plurality of fields in non-reference frames and select reference frames using information contained in merely corresponding fields of a single subsequent, temporally closest, reference frame;</u>

wherein the <u>only</u> unidirectionally predicted non-reference frames <u>that are predicted only from their respective temporally closest anchor frame</u> comprise a frame that is defined as a bi-directionally predicted frame according to an encoding protocol for the stream of data.

21. (Original) A method according to claim 20, wherein the reference frames include I-frame and P-frame types.

22. (Original) A method according to claim 20, wherein the non-reference frames include B-frames.

23. (Original) A method according to claim 20, wherein select reference frames include P-frames.

24. (Original) A method according to claim 20, wherein the content of each of the plurality of fields of the non-reference frame are predicted from a corresponding field of the plurality of fields comprising the reference frame, scaled by a dynamically determined motion vector.

25. (Original) A method according to claim 20, wherein a first field of the non-reference frame and the reference frame comprises even-field content, while a second field of the reference frame and the non-reference frame comprise odd-field content.

26. (Original) A method according to claim 25, wherein the first field of the non-reference frame is predicted using merely information from the first field of the reference frame.

27. (Original) A method according to claim 25, wherein the first field of the non-reference frame is predicted using merely information from the second field of the reference frame.

28. (Original) A method according to claim 25, wherein the second field of the non-reference frame is predicted using merely information from the first field of the reference frame.

29. (Original) A method according to claim 25, wherein the second field of the non-reference frame is predicted using merely information from the second field of the reference frame.

30. (Original) A storage medium comprising a plurality of executable instructions which, when executed by a computing system, cause the computing system to implement a method according to claim 20.

31. (Original) A storage medium comprising a plurality of executable instructions which, when executed by a computing system, cause the computing system to implement a method according to claim 1.

32. (Previously Presented) The method of claim 1 wherein is encoded according to a Motion Picture Experts Group (MPEG) standard for video data.

33. (Previously Presented) The method of claim 32 wherein the predicted frame is a B-frame and the anchor frame is one of an I-frame or a P-frame.

34. (Previously Presented) The apparatus of claim 12 wherein is encoded according to a Motion Picture Experts Group (MPEG) standard for video data.

35. (Previously Presented) The apparatus of claim 34 wherein the predicted frame is a B-frame and the anchor frame is one of an I-frame or a P-frame.

36. (Previously Presented) The storage medium of claim 18 wherein is encoded according to a Motion Picture Experts Group (MPEG) standard for video data.

37. (Previously Presented) The storage medium of claim 36 wherein the predicted frame is a B-frame and the anchor frame is one of an I-frame or a P-frame.